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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,940	06/27/2003	Martin Sansing	SANMA.001A	8671
20995	7590	02/17/2005		EXAMINER
				FERNSTROM, KURT
			ART UNIT	PAPER NUMBER
			3714	

DATE MAILED: 02/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/607,940	SANSING, MARTIN
	<b>Examiner</b>	<b>Art Unit</b>
	Kurt Fernstrom	3714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-66 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-32,34-38,40-45,47-52 and 54-66 is/are rejected.
- 7) Claim(s) 33,39,46 and 53 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____.   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/25/03</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____.                                   |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-31, 37, 52, 63 and 66 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites "at least one number piece corresponding to numbers one through ten". This is indefinite because one single number piece does not correspond to all of those numbers, each number piece corresponds to one of the numbers. Amendment of the language to "at least one number piece corresponding to **each of the numbers** one through ten" would overcome the rejection. Also, claims 14 and 37 recite "the number labels", and claim 57 recites "the receiving position labels. There is insufficient antecedent basis on the claims for these limitations, as the phrase "are labeled with numbers" does not necessarily involve a physical label per se. Claim 15 recites "a one or more", which is indefinite due to a grammatical error. With respect to claims 28, 63 and 66, the claims recite images on a computer. This does not properly limit the scope of claim 1 and 32, as those claims recite physical objects.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4-6, 10, 12, 20, 29, 30, 32, 40-42, 48, 49, 61, 62, 64 and 65 are rejected under 35 U.S.C. 102(b) as being anticipated by Walker. Walker discloses in Figures 1-8 and in the specification a mathematics education apparatus comprising a base array (shown in Figures 1 and 2) comprising a plurality of rows, each row comprising ten receiving positions, and a plurality of number pieces (shown in Figures 3-6), each piece of a length proportional to its number value, where the pieces are configured to cover a plurality of the receiving positions. Walker discloses in column 3, lines 9-10 that pieces representing each of the numbers 1-10 are provided. With respect to claims 4, 5, 41 and 42, the array and number pieces are substantially two-dimensional. With respect to claims 6 and 40, Walker discloses in Figures 1 and 2 that the base array comprises lines, which act as a visual indicator for setting off receiving positions. With respect to claims 10, 12, 20, 48; 49, 61 and 62, Walker shows in Figures 1 and 2 there are ten rows and ten columns, such that each row is the same length. With respect to claims 29, 30, 64 and 65, Walker discloses in column 3, line 38 to column 7, line 9 that the device is used to perform various mathematical operations including addition, subtraction, multiplication and division.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker in view of De La Rosa. Walker discloses all of the limitations of the claims with the exception of the vertical orientation of the base array. However, vertically oriented math teaching devices are known, as shown for example in De La Rosa. It would have been obvious to one of ordinary skill in the relevant art to modify the device disclosed by Walker by providing a vertical orientation for the purpose of allowing a user to demonstrate the device to a group of learners.

Claims 3, 8, 24, 43 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker. Walker discloses all of the limitations of claims 3 and 43 with the exception of the instructions. However, Official Notice is taken that instructions are a well known component of educational device, and would have been an obvious way to show the user how to use the device. It would have been obvious to one of ordinary skill in the relevant art to modify the device disclosed by Walker by providing a vertical orientation for the purpose of a user to demonstrate the device to a group of learners. Walker further discloses all of the limitations of claims 3 and 43 with the exception of the fasteners. However, the fasteners are considered to be an obvious variation on the pegs and holes of Walker, since both serve the same purpose of securing the pieces to the base array. Walker further discloses all of the limitations of claim 24 with the exception of the recesses in the pieces. However, the recesses are considered to be

an obvious variation on the holes of Walker, since both serve the same purpose of securing the pieces to the base array.

Claims 7 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker in view of Derr. Walker discloses all of the limitations of the claims with the exception of the magnets. However, using magnets to secure pieces to a base in an educational apparatus is known, as disclosed for example in column 3, lines 28-30 of Derr. It would have been obvious to one of ordinary skill in the relevant art to modify the device disclosed by Walker by providing magnets for the purpose of securing the pieces to the base array.

Claims 11 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker in view of Mulholland. Walker discloses all of the limitations of the claims with the exception of the gap. Mulholland discloses in Figure 3 a math teaching device comprising a base array of numbers for receiving pieces, and gaps between the rows of the array. It would have been obvious to one of ordinary skill in the relevant art to modify the device disclosed by Walker by providing the gaps as claimed for the purpose of providing a further visual separation between the rows.

Claims 13, 16, 18, 19, 21, 22, 23, 25, 26, 37, 38, 51, 52 and 54-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker in view of Harte. Walker discloses all of the limitations of claims 13 16, 18, 19, 21, 22, 37, 38, 51, 52, 54, and 55 with the exception of the numbers on the array. Marte discloses in Figures 1, 3, 17 and 18 and in the specification a math teaching device comprising a base array for receiving pieces where the array is labeled with numbers. It would have been obvious to one of

ordinary skill in the relevant art to modify the device disclosed by Walker by providing the numbers on the array as claimed for the purpose of providing a further visual indication relating to the math concepts being taught. The various methods of securing the numbers to the array are considered to be obvious variations on the disclosure of Marte. Walker further discloses all of the limitations of claims 23, 35, 36 and 56-59 with the exception of the recesses and raised portions in the pieces and array to allow for stacking of the pieces. Marte discloses in Figures 36-38 and in the specification a math teaching device comprising a base array for receiving pieces where the array and pieces have various aised and recessed portions which allow a user to stack the pieces on top of each other. It would have been obvious to one of ordinary skill in the relevant art to modify the device disclosed by Walker by providing raised and recessed portions as claimed for the purpose of allowing a user to more easily align the pieces with the array, and also to allow a user to stack the pieces.

Claims 27 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker in view of Armstrong. Walker discloses all of the limitations of the claims with the exception of the use of different colors of the different length of pieces. However, this feature is known, as shown for example in Figure 3 and in column 2, lines 48-58 of Armstrong. It would have been obvious to one of ordinary skill in the relevant art to modify the device disclosed by Walker by providing different colors as claimed for the purpose of allowing for further visual differentiation between the different pieces.

Claims 28, 31, 63 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker in view of Baguley. Walker discloses all of the limitations of

the claims with the exception of the use of a computer which provides images of the features. It is well known to use a computer to display images relating to an educational apparatus, as disclosed for example in column 3, lines 38-43 of Baguley. It would have been obvious to one of ordinary skill in the relevant art to modify the device disclosed by Walker by providing computer images as claimed for the purpose of allowing a user to use the device without need for a physical apparatus.

Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Walker in view of Wanvig. Walker discloses all of the limitations of the claim with the exception of the negative numbers. However, providing a math teaching apparatus having a base array of numbers comprising negative numbers is known, as disclosed for example in Figure 11 of Wanvig. It would have been obvious to one of ordinary skill in the relevant art to modify the device disclosed by Walker by providing negative numbers on the array for the purpose of teaching a user about concepts relating to negative numbers.

Claims 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker in view of Woldenberg. Walker discloses all of the limitations of the claims with the exception of the use of fractions and decimals on the pieces. However, such a feature is known, as disclosed for example in column 3, lines 13-15 of Woldenberg. It would have been obvious to one of ordinary skill in the relevant art to modify the device disclosed by Walker by providing pieces representing decimals and fractions for the purpose of teaching a user about the related concepts.

***Allowable Subject Matter***

Claims 9, 14, 15 and 17 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claims 33, 39, 46, 53 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lin, Stassen, Wilcox, Quer, Booth, Morgan, Smith, Tsai and Manancero disclose various math teaching devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kurt Fernstrom whose telephone number is (571) 272-4422. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jessica Harrison can be reached on (571) 272-4449. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



KF  
February 16, 2005

**KURT PERNSTROM**  
**PRIMARY EXAMINER**